



Department of
**Environment &
Conservation**

Waste and Scrap Tire Management Toolkit

A guide to managing end of use tires in Tennessee

Tennessee Department of Environment & Conservation | Guidance | August 2018



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Waste Tire Management in Tennessee

The purpose of this toolkit is to provide resources for local governments and their staffs who collect, manage, and arrange for disposal of waste tires.

- [The Tennessee General Assembly passed the Solid Waste Management Act of 1991 or the Act](#), that allowed the Waste Tire Program to be initiated. Statute and solid waste rules ban whole tires from disposal in all Tennessee landfills. The Act requires each county to have at least one (1) site for reception and storage of waste tires for its citizens and tire dealers. The Act also authorizes the Tennessee Department of Environment and Conservation (TDEC) to provide assistance grants to counties, and develop a program to find beneficial reuses for their waste tires. The Act prohibits counties from disposing of tire shreds in a landfill if beneficial end uses are available unless disposal options are clearly less expensive than beneficial use. Under its authorized powers, TDEC may cleanup unpermitted tire disposal sites (tire dumps) and seek cost recovery from the responsible party.
- Tire consumers fund the program through a \$1.35 pre-disposal fee paid on the sale of new tires sold at retail. It includes all tires for vehicles that travel on state roads including those from farm tractors and equipment. You can learn more about the tire fee and find the necessary tax [return forms](#) by visiting the [Department of Revenue website](#).

Tire Fee Breakdown

- Pre-disposal fee
 - \$0.10 – Dealer
 - \$0.25 – TDEC
 - \$1.00 – County of origin
- [TEAP \(Tennessee Environmental Act Program\)](#)
 - \$5.00 – Automotive Sales (up to 5 tires)
 - Additional tires on new vehicles are according to a fee schedule obtained through the Office of Policy and Sustainable Practices (OPSP)
 - OPSP manages the TEAP for developing additional businesses for waste tire conversion into beneficial use.
- Common sources of scrap tire generation include tire dealerships, internet sales, new car sales, mobile tire service repair (non-permanent site)

Common Waste Tire Terminology

- **CO** - TDEC Central Office located in Nashville
- **DOR** – Department of Revenue collects and distributes the tire pre-disposal fee revenue. DOR is responsible for distribution of collected fees to the respective county for costs associated with waste tire management.
- **EFO** - [Environmental Field Office](https://www.tn.gov/environment/contacts/about-field-offices.html) are located in eight regions in the state. The Environmental Field Offices and the served counties may be located: <https://www.tn.gov/environment/contacts/about-field-offices.html> or Appendix I
- **TDEC** – Tennessee Department of Environment and Conservation manages grants and provides technical assistance regarding waste tire disposal options and management practices.
- **TDOT** – Tennessee Department of Transportation interacts with counties with Litter Grant funding and some clean up within the county.
- **TDA** – Tire Derived Aggregate (TDA) consists of scrap tires cut into pieces that have a basic geometrical shape and range between 2 inches (50 mm) and 12 inches (305 mm) in size and are intended for use in civil engineering applications” (ASTM D6270-08).
- **TDF** – Tire Derived Fuel is composed of shredded scrap tires. Concrete kilns, power plants, or paper mills may mix tires with coal or other fuels, such as wood or chemical wastes, and burn to improve the British Thermal Unit (BTU) value of the fuel materials.
- **Tires** - "Tire" means a continuous solid or pneumatic rubber covering encircling the wheel of a motor vehicle.
- **Waste Tires** – Used rubber tires that because of their abrasion state ("tire wear") are not safe for public traffic. Generators can send waste tires to beneficial use such as tire recycling,

Regulatory Guidance

67-4-1610. Fee Deduction -- Amount

(a) For the purpose of compensating the dealer in accounting for and remitting the fee, a dealer shall be allowed a deduction of the fee due, reported and paid to the department in the amount of ten cents (10cent(s)) per tire reported on the return. No deduction from the fee shall be allowed if any such report or payment of the surcharge is delinquent.

(b) (1) Notwithstanding Chapter 994 of the Public Acts of 2000, or any other law to the contrary, the remaining amount of the fee levied by [§ 67-4-1603](#) that is not retained by the dealer pursuant to subsection (a) shall be allocated as follows:

(A) If a county does not have a tire grant contract with the department of environment and conservation pursuant to the tire grant program administered under [§ 68-211-867](#), one dollar (\$1.00) per tire sold in that county shall be sent directly by the commissioner of revenue to such county to be used for beneficial end use of waste tires in accordance with [§ 68-211-867](#) and not used for any other purposes. The remaining balance of the fee shall be allocated to the solid waste management fund established [by § 68-211-821](#). The county shall include in its annual progress report to the department of environment and conservation pursuant to [§ 68-211-814\(a\)](#) data on how many waste tires it manages and what is done with them; or

(B) If a county has a tire grant contract with the department of environment and conservation pursuant to the tire grant program administered under [§ 68-211-867](#), or had such a tire grant contract that was in effect at the time the fee was imposed, the remainder of the fee per tire sold in that county shall be allocated to the solid waste management fund established by [§ 68-211-821](#). The department of environment and conservation shall return a minimum of one dollar (\$1.00) per tire sold in such counties to the county under its grant contract. If the grant contract either does not allow the department of environment and conservation to return a minimum of one dollar (\$1.00) per tire sold in a county to such county, or would require repayment of any such funds, the department of environment and conservation shall return a minimum of one dollar (\$1.00) per tire sold in such county to the county through additional grants, unrelated to the tire grant contract, for beneficial end use of waste tires in accordance with [§ 68-211-867](#) and not used for any other purposes. Such counties are not required to submit any additional workplan, budget, or other similar document. Any such additional grants shall be based on one dollar (\$1.00) per tire sold in the county minus any amounts returned under the tire grant contract. The county shall include in its annual progress report to the department of environment and conservation pursuant to [§ 68-211-814\(a\)](#) data on how many waste tires it manages and what is done with them.

(2) It is the purpose of this subsection (b) to require that a minimum of one dollar (\$1.00) of the one dollar and thirty-five cents (\$1.35) per tire pre-disposal fee be returned to the county in which the fee was imposed regardless of whether the county has a tire grant contract with the department of environment and conservation.

68-211-867. Waste Tire Disposal

(a) The department of environment and conservation is directed to develop a program to manage the waste tire program for beneficial end use.

(b) For the purposes of this section, "beneficial end use" includes the following:

(1) Cement manufacturing;

(2) Burning of tire-derived fuel in contained industrial boilers for the capture of energy;

(3) Production of tire-derived fuel, provided the department approves the planned use of the processed tire material;

(4) The crumbling or pyrolysis of tire material, provided the processor provides for the planned use of the processed tire material under such requirements established by the department;

(5) Recreational applications, including, but not limited to, playgrounds, running tracks, and walking paths; or

(6) Any use otherwise deemed appropriate by the department of environment and conservation and for which either the board has promulgated rules or the department has developed and published policies; provided, that this section shall not be construed to require or mandate the use of products or materials resulting from waste tires. The board shall not promulgate any rules, and the department shall not establish any policies mandating the use of products or materials resulting from waste tires. It is the specific intent of the general assembly that any use of products resulting from the waste tire program is entirely voluntary on the part of the end user.

(c)

(1) The department is authorized to use funds available from the solid waste management fund to contract directly with an approved beneficial end user or its designated agent for recycling of waste tires. Each beneficial end user or agent awarded such a contract shall demonstrate to the department's satisfaction the ability to provide collection, management and transportation to its facility of all eligible and available waste tires generated within the area or county specified by the department. Any such contract shall be subject to approval by the county legislative body of each county in whose territory the contract shall be operative. Any such contract shall also require an appropriate performance bond from any entity producing tire-derived fuel or crumbling or pyrolysis of tire material to ensure proper storage, transportation and ultimate sale or disposal of such materials.

(2) From funds available from the solid waste management fund, the department may provide grants to assist counties in locating, collecting and appropriately disposing of waste tires. Any county receiving a grant under this subdivision (c)(2) after July 1, 2000, shall not assess a tipping fee on the waste tires received at a county waste tire collection site so long as the amount of the grant covers the cost of the county's waste tire management program.

(3) From funds available from the solid waste management fund, the department may provide grants to local education agencies, municipalities or counties to utilize recycled shredded tires for recreational applications.

(4) Any county or entity requesting or applying for a grant or entering a contract with the department shall submit, prior to being approved for a grant or contract, a workplan and budget to reflect the expenditures of the grant or contract. The grants or contracts are to fulfill the objective of recycling waste tires and to assure that all expenditures of the contracts, grants, or any additional local tipping fees are not exceeding the cost of the county's waste tire management program.

(d)

(1) A landfill shall not accept whole, unshredded waste tires for disposal. Landfill operators shall segregate whole, unshredded waste tires at landfills and provide a temporary storage area for such tires until transported to an appropriate facility to be used for an approved beneficial end use as defined in this section, or the tires are shredded and disposed of pursuant to subdivision (d)(2) and regulations promulgated by the board.

(2) A county may not dispose of shredded waste tires in a landfill after July 1, 2002, if the county's net cost for shredding, transporting and disposing of waste tires exceeds the cost of an available beneficial end use. Nothing in this subsection (d) shall prohibit a county from electing to participate in a beneficial end use for waste tires at a cost that exceeds the county's net cost for shredding, transporting and disposing of waste tires in a landfill.



County Responsibilities

The individual counties are responsible for managing the waste tires in the respective counties. Since July 1, 2014, the responsibility of tire management falls to the counties. The County receives funds collected from DOR for new tire transactions from all businesses within the county boundaries. The County uses these funds to support the collection and management of waste tires for better end uses.

Storage/Collection

Counties should make one site available to the citizens to receive tires for disposal. The County has options to operate the site by contractor or by county personnel. The county may designate a maximum number of tires allowed per household per year without additional charge. Typical storage locations include landfills, convenience centers, highway garages, and recycled material recovery centers.

Waste Tire Collection Site Permitting

The criteria outlined below will assist local municipalities, counties, or other interested parties in obtaining permits and determining a waste tire collection location.

- Notify to EFO that has oversight of the county of interest
- Meet all local zoning, permitting and land use applications relative to the site,
 - Apply for storm water permitting
 - Meet site requirements for local zoning or other required permits
- EFO will coordinate with the CO for any required permitting or permit by rule requirement
- Layout should provide sufficient space for incoming and outgoing transit vehicles including regular safe drop off for citizens
- Access to some method to weigh the tires or have appropriate conversion tables to count and track the tires
- Tires should be kept off the ground and covered to prevent any water accumulation
- EFO will list the site in the Division's WasteBin database for tracking and accountability
- Facility must comply with the permit requirements, rules, and statutes and are subject to random inspection by the respective EFO

Fiscal Responsibilities

The counties are responsible for managing the funds for tires collected within the county. The county receives funds from the Tennessee Department of Revenue (DOR) on a quarterly schedule. The Counties may only use funds from the waste tire pre-disposal fee for waste tire management and are subject to audit requirements by the State Comptroller. Counties may call DOR at 615-253-3254 to receive information regarding fee payment tracking. DOR will provide web links and passwords to aid counties desiring to track waste tire funding within their county.

The state developed a financial management tool to measure the effectiveness of waste tire programs. The financial tool will assist counties calculating all costs associated with the waste tire management. This tool accounts and assists in the capture of all fees and other costs to provide a balance sheet of income and expenses. New tire dealers may arrange to accept waste tires and provide credit for the pre-disposal fee paid to DOR with the county. The counties and municipalities may require additional fees for the operation of their programs. The Waste Tire Financial Tool is located in Appendix I.

Waste Tire Disposal

Providing waste tire disposal options to the public is the responsibility of the local governing body. The county should review different options to determine operation independently or in partnership with other counties and municipalities through a Hub and Spoke agreement. Combining resources can lower costs and remove excess burden placed on smaller communities required to provide services. It further may potentially reduce disposal costs by increasing the volume of waste tires available for processing.

Legacy Waste Tire Identified Sites vs Unpermitted Tire Sites

In 2014, TDEC staff identified legacy unpermitted waste tire sites across Tennessee and prepared a specialized grant to assist in the proper cleanup and disposal of the land or waterway. Upon the creation of this legacy listing, any illegal waste tire site discovered after 2014 is the responsibility of the local county who are responsible for maintaining accountability of



waste tire sites and the previously cleaned sites. Resources available through law enforcement, TDOT litter grant, and TDEC Environmental Field Offices may assist with identifying and eliminating new illegal unpermitted waste tire disposal sites.

Counties and municipalities often receive complaints concerning unpermitted and illegal tire sites. To manage these sites, the county should establish a clear local policy for taking complaints and routing them to the appropriated agency for investigation and follow up. This document will provide guidance with site resolution and cleanup. The following procedure identifies key processes necessary to remediate properly any discovered unpermitted waste tire disposal site.

1. The County should report suspected legacy tire sites identified after the July 2014 to the appropriate Environmental Field Office (EFO) where the tire disposal site is located.
 - a. This process allows the EFO to enter the tire disposal site information into [WasteBin](#), the electronic tracking system for complaints and response actions by the Department.
 - b. The investigation and registration in [WasteBin](#) is a recommended item by the TDEC Office of General Counsel.
2. When the reported tire unpermitted disposal site is entered into WasteBin, and the EFO conducts an investigation, the inspector may determine the source of the illegally disposed tires and any circumstances surrounding this event.
 - a. The local TDEC inspector will conduct an inspection and site visit and discuss clean up options.
 - b. If property owner does not comply with clean up requirements, the Department should proceed with the full enforcement authority to include Commissioners Orders before the Division awards grants for cleanup.
3. Depending upon the results of Step 2 above, the counties and municipalities may apply for match grants to cleanup these waste tire disposal sites to ensure public health is safe.
4. Counties and municipalities applying for a waste tire cleanup grant for sites identified after July 1, 2014 must comply with all grant-funding requirements.
5. As a part of the funding conditions, the Department will place a property lien on the site to recover expenses incurred by the State. The funding recovery process requires complete inspection and enforcement process to support the property lien process. The local government should share with property owners in advance of any arrangements or likeliness related to property liens.
6. If the unpermitted tire site is not eligible for grant funding, the responsibility for proper tire disposal management will fall to the county or municipality. The county receives tire fee funds from new tire sales to assist in the cleanup costs.

Tire Collection

Tire Storage Requirements:

- Division of Solid Waste Management [Tire Storage Policy](#) describes requirements.
- Store and manage tires in a manner that does not give the impression of disposal. The site should provide some means of moving product off site for beneficial use.
- Store tires off the ground to avoid storm water issues.
- Store tires in a manner that water will not accumulate inside the tires or in a manner that attracts vermin or mosquitos.
- Operator must demonstrate proof of vector control if storing in an open top trailer or equivalent storage method that does not have a roof or cover structure.



Convenience Center

In addition to the above requirements, the following apply to convenience centers:

- The regional EFO will subject the convenience centers to regular inspections. Center operators should store tires in compliance with the Convenience Center operational rules.
- Typical storage units consist of an enclosed roll-off container, storage sheds, Quonset huts, carports, or tarping.

Contract/Dealer Collection

- The Statute requires counties to have at least one site for the collection of waste tires from citizens. Some counties choose to contract with vendors to collect and manage the waste tires. The contract should contain appropriate scopes to meet the needs of the county and comply with the waste tire requirements including storage, disposal, and maintaining the appropriate documentation. Counties will receive the pre-disposal fee payments from the DOR that assists the county in funding the contractor as agreed for the fulfillment of the scope of services.

Tire Disposal Options

Individual Contract: Counties may contract with a tire processor or end user of their choice. When entering into contracts, counties should look in depth at terms of the contract terms regarding how the vendor handles price changes, extensions, and options to cancel within their contract. The local government should seek legal counsel to review the terms of a purposed tire-handling contract from the perspective of agency interests as a priority. The Department provides a “Waste Tire Self-Analysis” worksheet to aid the local agency to review quickly the current tire collection operation.

Multiple Counties using a Hub and Spoke Approach: Counties work together sharing infrastructure and market negotiations to gain economy of scale of tires sent to tire processors. With larger volume, non-duplicated infrastructure, and centralized collection or pickup, a partnership receives increased cost savings and a reduced handling rate from the tire processor. Through collaboration, the partnership can designate a lead agency or contractor to manage all the associated administrative fees and responsibilities. It is necessary to use a strong business model and interact with all partners within this operation.

Specific Sources: Counties that contract with specific waste tire processors will need to take into consideration the same items discussed in the individual contract disposal options.

Tire Shredding for Landfilling: Local governments may purchase tire-shredding equipment to convert whole waste tires to a size acceptable and manageable for use as a fill material in civil engineering projects or for different aspects of landfill use. The appropriate TDEC Environmental Field Office will need to approve use of the shredded tires in landfill projects in advance.

Beneficial Uses of Waste Tires

Determining Beneficial Use

The interested party should contact the appropriate EFO who will make the determination or contact permitting in the CO. The permitting process and description of the desired operation should be provided to show how the tires will not become a liability in future years. Tires continue to be a liability in future years if they maintain the tire shape. Tires that are cut or shredded become regular solid waste. Counties receive credit for beneficial use in the Annual Progress Report (APR) reporting process.

Civil engineering projects that incorporate waste tires and tire products provide different option for beneficial use of tires. The solid waste permitting section has allowed tires to be used as foundation materials, materials for septic line drain field (approved by water resources specific to the manufacturer), road construction projects by using crumb rubber in asphalt. When waste tires are processed into a form that is in the crumb rubber format, the material can be used for walking trails and tracks. Counties and municipalities can encourage and share materials with various parks and recreation activities to encourage the use of tire-derived materials.

Organizational Contacts

Tennessee County Tire Collection Locations

- <https://www.tn.gov/environment/program-areas/sw-mm-waste-tire-program/sw-mm-waste-tire-collection-sites.html>

Tennessee Department of Revenue

- New Businesses: New tire businesses are required to register and receive an Account Number in each county that the business has a location. This will be a different number from the sales tax registration number.
- <https://www.tn.gov/revenue/taxpayer-education/new-businesses.html>

Revenue Help

- <https://revenue.support.tn.gov/hc/en-us>

DOR Departmental Contact Info:

- <https://www.tn.gov/revenue/about-us/contact-us/departamental-contact-information.html>

DOR Office Locations:

- <https://www.tn.gov/revenue/about-us/contact-us/office-locations.html>

Oil and Tire Fees:

- <https://www.tn.gov/revenue/taxes/oil-and-tire-fees.html>

Tire Pre-Disposal Fee return (TIR 408)

- <https://www.tn.gov/content/dam/tn/revenue/documents/forms/oiltire/tir408.pdf>

Tennessee Department of Transportation

- Litter Grant Program

Clarification of Registration Numbers and locations (DOR):

- Maintenance/Registration Unit: (615) 741-8994/fax (615) 532-9784

Quarterly tire report and password update (DOR):

- For County Governments use for password update: 615-253-3254

[Liberty Tire Recycling](#)

<http://libertytire.com/>

Corporate Office

Pittsburgh, PA

Phone: (412) 562-1700

Email: Corporate@libertytire.com

Nashville, TN

Phone: (615) 727-5776

Email: Tennessee@libertytire.com

[Patriot Recycling Inc](#)

247 North Industrial Dr.

Bristol, TN 37620

Phone: (423) 573-1205

Email: office@patriotrecycling.co

www.patriotrecycling.com

[Rockwood Recycling](#)

<http://www.rockwoodrecycling.com/>

Phone: (615) 293-2997

Email: recycle@rockwoodrecycling.com

510 Hartmann Drive

Lebanon, TN 37087

[Cemex](#)

Cement manufacture

www.cemex.com/

6212 Cement Plant Road, Knoxville, TN 37924

Phone: (865) 541-5500

FAQ

What constitutes a beneficial end-use of scrap tires?

A particular application must provide certain engineering benefits over traditional materials. A particular application must provide certain economic benefits over traditional materials. The tire is entirely consumed or loses its identity as solid waste. Except for whole tire fuel, the material used is a value-added product. The application causes no present or future environmental problems. The application saves landfill space. The use is not merely a creative disposal method.

Do I turn a person away with tires?

If they are turned away and no options given, it will generate a dump site as some location.

What can I learn from pay as you throw and applying it to the tire program?

Persons may be willing to pay, if they are given the option.

Who is responsible for tire management in my county?

Contact the respective county solid waste department.

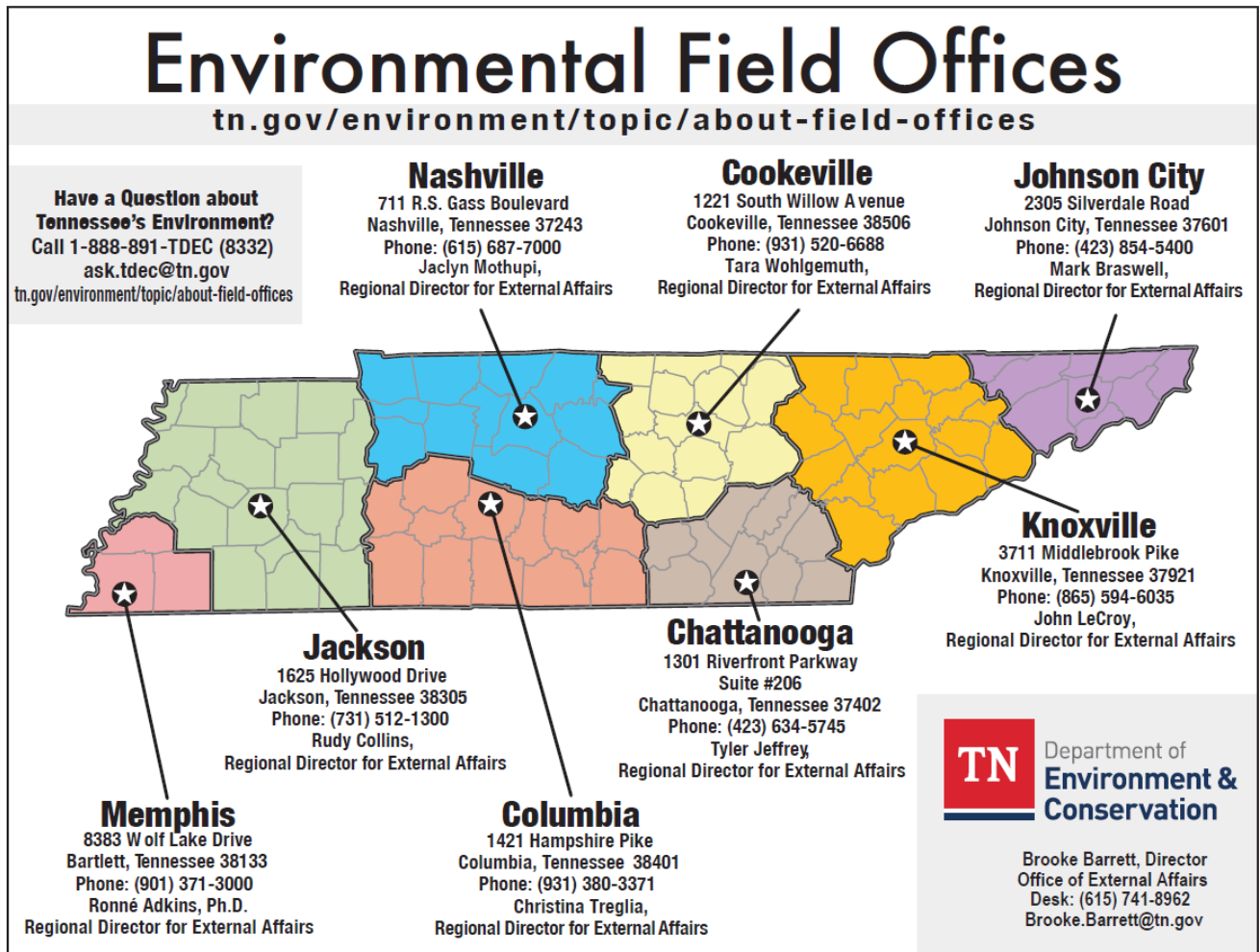
Who should I report a tire dump site?

Contact the local county solid waste department or the appropriate Environmental Field Office for the county where the dump site is located.

Funds are generally restricted to public property clean-up. If private property is cleaned up, there may be fees levied against the property for recovery of expenses.

Additional resources for illegal waste tires may be reported to Cities and Municipalities in the Codes Enforcement, Planning and Zoning Offices in addition to the Fire Marshall.

Appendix I: Tennessee Environmental Field Office Reference Map



Appendix II: Waste Tire Collection Self-Analysis

The table provided below is a financial self-analysis to get a general understanding of your tire management costs. For additional resources and sources of funding, please refer to the Resources section of this toolkit. Digital copies please double click to access the file.

RESET

Waste Tire Management Self Analysis

This tool is designed to provide collection operations
a look into the finances of managing tires.

REVENUE	Example Only Year 2017	Enter Time Period	
(A) New Tire Dealer Sales Fee (\$1 per tire sold in County)	\$15,478		Time period subject to local budget/revenue information time period
(B) Other fees	\$25		This information is obtained from Department of Revenue or County Clerk
(C) Tire Disposal Fee charged at drop off site	\$15		Other fees collected if applicable
(D) <i>Net Revenue</i>	\$15,518	\$ 0.00	Optional fees you can charge to cover disposal costs (see Tire Fees Table)
(E) Local Dealer Disposal Agreement	\$500		Add lines A+B+C for total revenue generated from managing tires
(F) <i>Total Potential Tire Management Revenue</i>	\$16,018	\$ 0.00	Fees levied to local dealer by acting as disposal outlet for waste tires
			Add Lines D + E
Tire Disposal Fees			
(G) Total Tons of Tires Disposed	50		Total tons of tires collected for established time period.
Waste Tire Tipping Charges			
(H) Per Ton Disposal Fee (Ex. \$60/Ton)	\$35		Established disposal rate with tire recycler.
(I) Disposal Total	\$1,750	\$ 0.00	Line H times Line G
(J) Trailer Rental Fee - Monthly (x12)	\$250		Fee for utilizing processor trailer for storage
(K) Transportation Fee	\$400		Fee for transporting trailer to processor
(L) Additional Fees (Demerage)	\$15		Fee for not meeting "generation rates" of tires for processor or trailer delivery
(M) Fuel surcharge - ***\$.30per Mile assumption x miles driven	\$125		Fuel Surcharge will generally be on the processor invoice. Subject to frequent changes
(N) Total Tire Disposal Expenses	\$5,150	\$ 0.00	Add lines I-M.
General/Administrative Expenses directly related to Waste Tire Management			
(O) Salaries and wages	\$2,000		Obtained from approved budget
(P) Facility Rent	150		Obtained from approved budget
(Q) Utilities (Electric, Water, Gas, Phone, etc.)	50		Obtained from approved budget
(R) Office supplies	10		Obtained from approved budget
(S) Equipment maintenance & rental (Loader, Grapple Hook, Canopy, etc.)	1,500		Budget and Rental Invoices
(T) Total General/Administrative Expenses	\$3,729	\$ 0.00	Add lines O-S.
(U) Total Operating Expenses	\$8,879	\$ 0.00	Total of Tire Disposal Fees and General Admin. Add line N and line T.
(V) NET INCOME (LOSS)	\$7,139	\$ 0.00	Subtract line F from line U.
(W) Annual Tire Disposal Budget	\$12,000		Obtained from approved budget
(X) Budget Balance	\$6,850	\$ 0.00	Subtract line W from line V

Figure 1 - Typical Waste Tire Responsibility Flow Chart

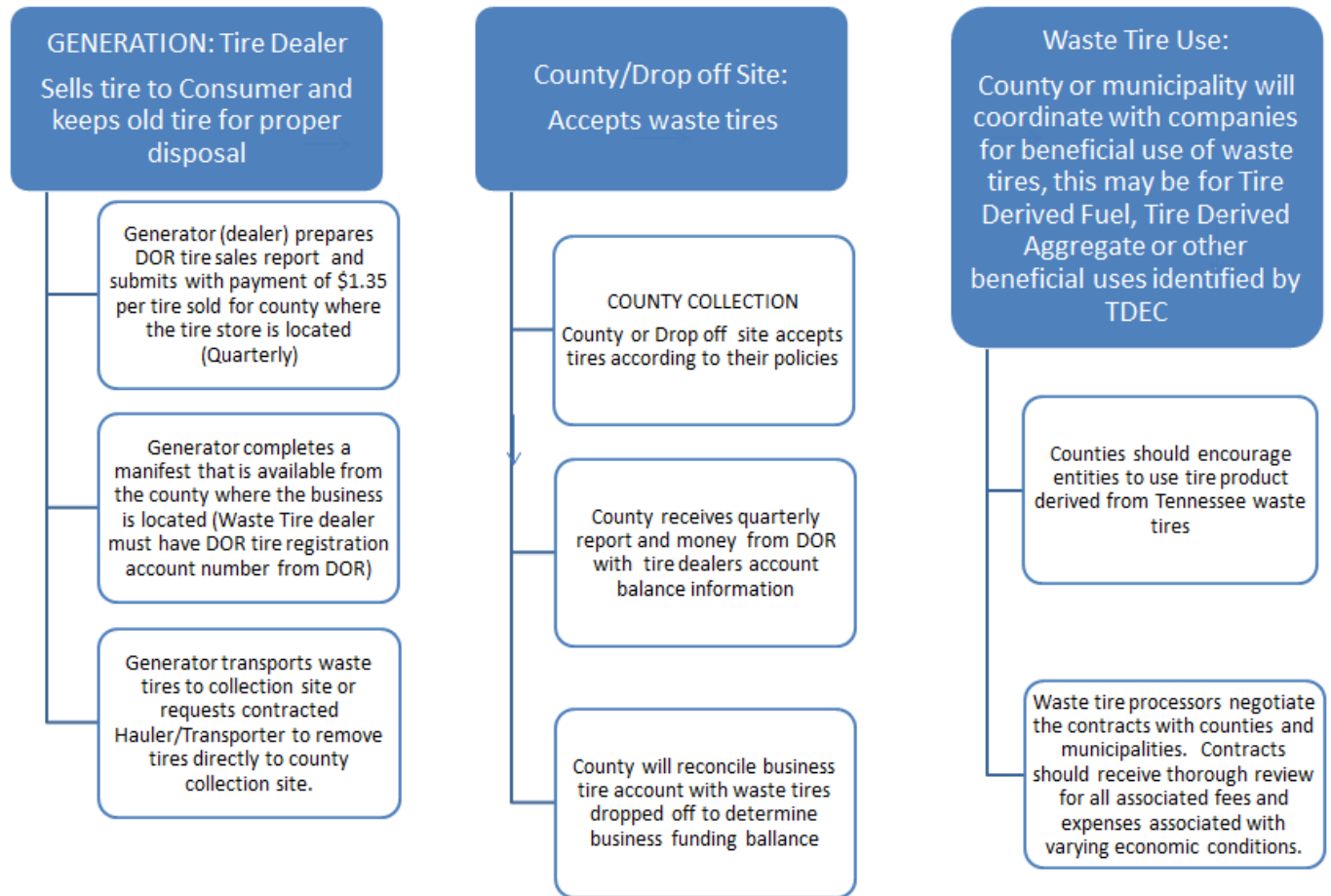


Figure 2 - Example Tire Fees for Additional Revenue

Suggested Tire Fees charged at tire collection site	Off Rim	Mounted on Rim
Passenger Tires (less than 19 inch rim size)	Up to 4 per month = Free \$2.00 each add'l	\$5.00 Each
Truck tires (19 to 24.5 inch rim size)	\$5.00 Each	\$10.00 Each
Super Singles Tractor Trailer tire	\$7.00 Each	\$14.00 Each
ATV, Lawn Mower, Small Aircraft, Motorcycle	\$2.00 Each	\$4.00 Each
Oversized Tires (larger than 24.5 inch rim)		
Skid Steer, Small Tractor, Large Aircraft	\$10.00 each	\$20.00 each
Medium Tractor, Road Grader	\$25.00 each	\$50.00 each

Figure 3 - Estimating Number of Tires at an Unpermitted Tire Disposal Site

APPROXIMATIONS FOR MEASURING LOOSE PILES

Average weight of one whole passenger tire = 20 lbs. = 1 PTE (Passenger Tire Equivalent)
 Average weight of one whole semi-truck tire = 100 lbs.= 5 PTEs

Whole passenger tires	10 PTEs/yd ³
Whole "semi" truck tires	3 semi-truck tires/yd ³
Single pass/rough shreds	27-30 PTEs/yd ³ (550-600 lbs/yd ³)
2-inch shreds	42-47 PTEs/yd ³ (850-950 lbs/yd ³)

APPROXIMATE RANGE OF NUMBERS OF PTEs

	Whole passenger tires	Single pass rough shreds	2-inch shreds
one 2500 ft ² pile (50' X 50' X 14')	12,963	34,992 - 38,880 (36,936 average)	54,432 - 60,912 (57,672 average)
one 2500 ft ² pile (50' X 50' X 8')	7,410	20,007 - 22,230 (21,118 average)	31,122 - 34,827 (32,974 average)
10,000 ft ² (4 - 2500 ft ² piles)	51,852	140,000 - 155,520 (147,760 average)	217,728 - 243,648 (230,668 average)

APPROXIMATE NUMBER OF WHOLE PTEs IN EACH PILE

PILE SIZE (in feet)	10 FT HIGH	11 FT HIGH	12 FT HIGH	13 FT HIGH	14 FT HIGH	20 FT HIGH	CONSTANT for one foot height increase or decrease
50'X50'	9,259	10,185	11,111	12,037	12,963	18,519	926
100'X50'	18,519	20,370	22,222	24,074	25,926	37,037	1,852
100'X100'	37,037	40,741	44,444	48,148	51,852	74,074	3,704
150'X100'	55,556	61,111	66,667	72,222	77,778	111,111	5,555
200'X200'	148,148	162,963	177,778	192,593	207,407	296,296	14,815
1 ACRE	161,333	177,467	193,600	209,733	225,867	322,667	16,133
2 ACRE	322,667	354,933	387,200	419,467	451,733	645,333	32,267
3 ACRE	484,000	532,400	580,800	629,200	677,600	968,000	48,400

(Based on 10 whole PTEs/yd³ & 43,560 square feet per acre)

COMPACTION WILL INFLUENCE THE TOTAL. COMPACTION IS INFLUENCED BY OVERALL HEIGHT OF PILE AND LENGTH OF STORAGE TIME IN PILE.

Supplemental Information – DSWM Storage Policy

Tennessee Department of Environment and Conservation Division of Solid Waste Management

Storage of Solid Waste Incidental to Recycling, Reuse, Reclamation or Salvage GUIDANCE

The intent of this guidance is to provide the Division of Solid Waste Management (DSWM) Field Offices with methodology for assessing compliance with the conditions for a permit exemption for the storage of solid waste incidental to its recycling, reuse, reclamation or salvage. One of the conditions for exemption requires storage in a manner that minimizes the potential for harm to the public and the environment. The storage of solid waste incidental to its recycling, reuse, reclamation or salvage, including non-new tires, must be conducted in a manner that does not create harm to the public or environment. An example of creating harm to the public would be the storage of non-new tires in a way that allows the pooling of water, creating breeding habitats for vectors, such as mosquitoes, which are known transmitters of the West Nile and Zika viruses.

Applicable Statutes and Regulations

The following Tennessee state statutes and DSWM Rules Governing Solid Waste Processing and Disposal are applicable to the storage of solid waste incidental to its recycling, reuse, reclamation or salvage.

T.C.A. § 68-211-103(9) defines solid waste disposal as:

"Solid waste disposal" means the process of permanently or indefinitely placing, confining, compacting, or covering solid waste;

T.C.A. § 68-211-104(3) and (4) state:

It is unlawful to:

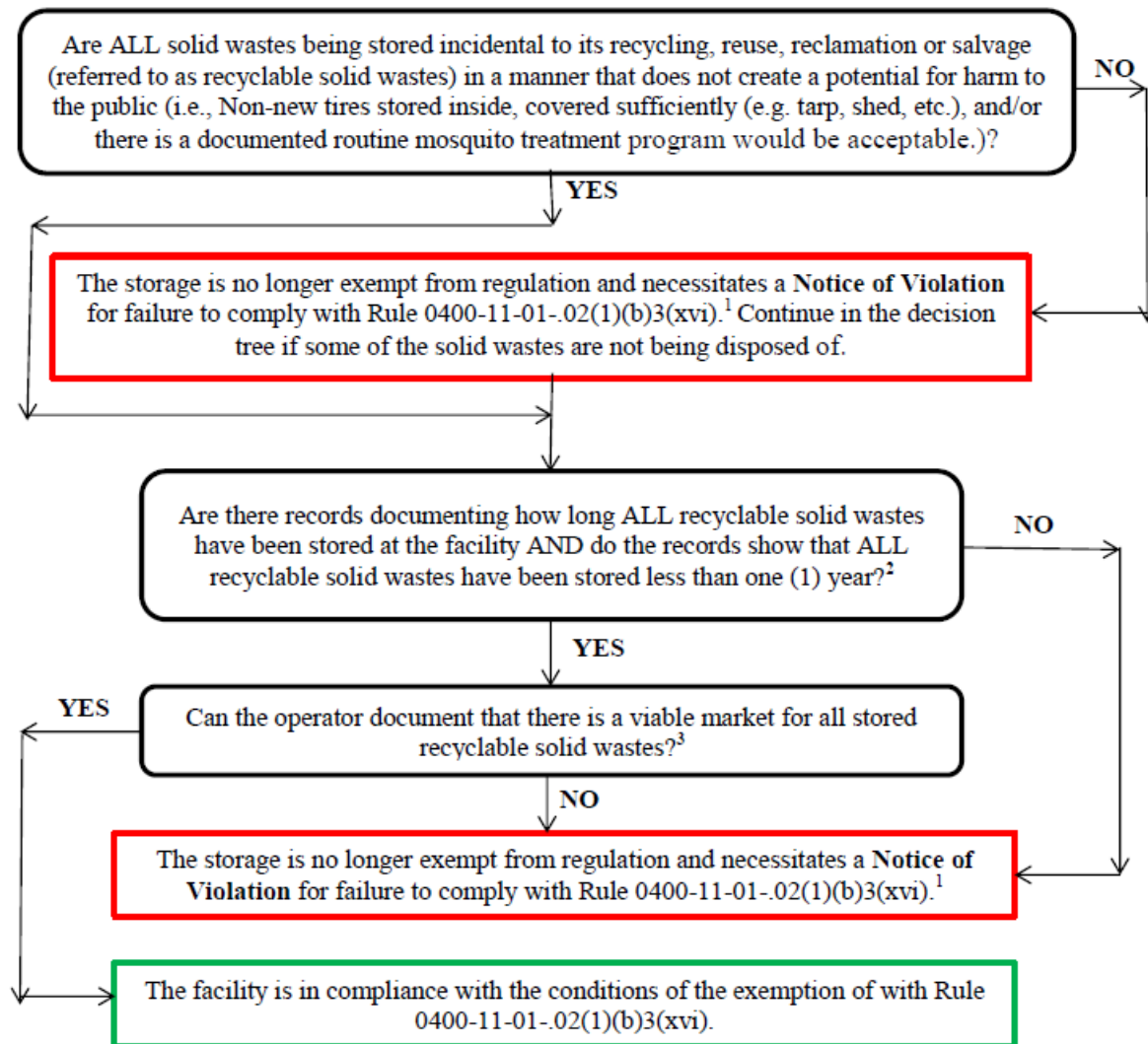
- (3) *Construct, alter, or operate a solid waste processing or disposal facility or site in violation of the rules, regulations, or orders of the commissioner or in such a manner as to create a public nuisance; or*
- (4) *Transport, process or dispose of solid waste in violation of this chapter, the rules and regulations established under this chapter or in violation of the orders of the commissioner or board.*

Rule 0400-11-01-.02(1)(b)3(xvi) provides the conditions for a permit exemption for the storage of solid waste incidental to its recycling, reuse, reclamation or salvage and states:

- (xvi) *The storage of solid waste that is incidental to its recycling, reuse, reclamation or salvage provided that upon request of the Commissioner, the operator demonstrates to the satisfaction of the Commissioner that there is a viable market for all stored waste and provided that all waste is stored in a manner that minimizes the potential for harm to the public and the environment. Material may not be stored for more than one (1) year without written approval from the Division.*

Decision Flow Chart

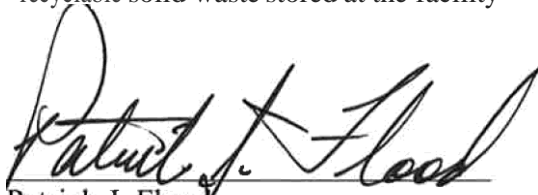
An investigation into whether the storage of solid wastes is incidental to its recycling, reuse, reclamation or salvage is conducted if the DSWM Field Office receives a complaint. DSWM staff should use the following Decision Flow Chart when conducting the complaint investigation. (Note: If there is evidence that all, or some of, the solid waste is being disposed of and the landowner exclusion is not applicable, then the owner/operator should be cited for unlawful disposal. Evidence of disposal includes solid waste placed as fill, in a ravine, saplings/heavy vegetation growing through or surrounding the solid waste, etc.)



¹ The Notice of Violation will require the action necessary, including removal from the site to an authorized offsite facility if appropriate, to correct the reason(s) for the Notice of Violation.

² The records must include: 1) The amount of recyclable solid waste stored at the facility; 2) The amount of recyclable solid waste generated onsite and received from offsite in the previous 12 months; 3) The amount of recyclable solid waste that has been sold and moved offsite in the previous 12 months; and, 4) A description of the system in place to document how long recyclable solid waste has been stored at the facility (e.g. dating tires, grouping tires by the date they were generated, etc.). Recyclable solid waste may be stored for more than a year if authorized in writing by the DSWM.

³ In addition to the information in footnote 2 above, the operator must show documentation (such as bills of sale) for all the recyclable solid waste reported as sold and that there is a market to sell ALL recyclable solid waste stored at the facility



Patrick J. Flood



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